A209 Pollen morphology of tribe Pterostegieae Torrey & Gray (Polygonaceae-Eriogonoideae)

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Pollen of two North American monotypic genera (*Pterostegia* Fisch. & Meyer and *Harfordia* Greene & Parry) in the tribe Pterostegieae Torrey & Gray (including three varieties of *Harfordia*, ca. 22 specimens in total) was examined in the light microscope and scanning electron microscope including the detailed descriptions of the inner surface of the tectum as well as endoapertures by using the cryomicrotomy-method with SEM. The pollen of Pterostegieae can be characterized as having usually 3-colporate, lolongate or almost circular (more common in *Harfordia*) endoapertures with a subtectate-microreticulate or ± ruglo-/stratio-perforate exine sculpturing. The pollen grains of the taxa *Pterostegia* and *Harfordia* are very much alike, thus are not easily separable, although there are some slight variations (especially pollen size and sexine patterns, etc.) occurred. The beneath of tectum of pollen in Harfordia is covered with comparatively few and less dense granules than that of *Pterostegia*, and these characters are reported for *Pterostegia drymarioides* Fisch. & Meyer for the first time here. This palynological datum (i.e., granular inner tectum surface) might be considered an important synapomorphic character which reinforces to connect more close relationship between the tribes Pterostegieae and Eriogoneae Meisn. in the subfamily Eriogonoideae.

A210 Phylogenetic Relationship of the Selected Green Euglenoids Based on 18SrDNA Sequence Data

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The small subunit rDNA (SSU rDNA) coding regions sequenced from the euglenoids *Euglena acus*, *E. anabaena* var. *minima* and *Phacus pleuronectes* were used to assess the phylogenetic relationships of the genera with other euglenoids. Genomic DNA was extracted using UNSET buffer for PCR amplification of 18SrDNA. Phylogenies derived from parsimony, maximum likelihood and neighbor joining methods infer that *E. acus*, *E. anabaena* var. *minima* and *P. pleuronectes* form sister clades within phototrophic euglenoids having one flagella. The trees showed the similar topologies with the previous reports that phototrophic green euglenoids followed the related phagotrophic euglenoids lineage. Our results imply that phototrophic green euglenoids with a pellicle composed of longitudinal strips appear to have diverged prior to genera with helically arranged strips. The taxonomic position and phylogenetic relationship on almost of phototrophic euglenoids will also be discussed.